

ABSTRACT

An improved device and process for atomic layer deposition (ALD) is provided. A more rapid deposition of layers is accomplished by a continuous flow of reactant moieties. The first moiety, carried by an inert carrier gas, is deposited as a monolayer. 5 The flow is then switched to the second moiety, also carried by an inert gas, which is deposited as a monolayer and which reacts with the first moiety thereby forming a product moiety monolayer. The process is repeated with continual switching of flow between the two different reactant moieties. This allows for the deposition of many layers of the product moiety. Any unreacted moiety molecules and unadsorbed product 10 moiety molecules are swept out by the carrier gas. The capability exists to use more than three reactant moieties and thus form complex materials.